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Educational Record:

University of Illinois (Urbana) : Ph.D. in Electrical and Computer Engineering. Aug. 1990

University of Illinois (Urbana) : M.S. in Electrical and Computer Engineering. May 1987

Indian Institute of Technology (Kharagpur, India) : Bachelor of Technology (Honors) in Electronics and Electrical Communication Engineering. May 1985

Thesis Topic:

Ph.D Thesis : Issues in IO architectures for high-performance/ multiprocessor systems

M.S. Thesis : Algorithm based Fault Detection Techniques for Specific Applications

B.Tech Thesis (Project) : Studies on Residue Number System for Signal Processing

Honors and Awards:

Cited for one of the most influential papers of first ACM Multimedia Conference

College of Engineering Excellence Award for Service, Texas A & M University, 2022

Catedra de Excelencia, University of Carlos III, Madrid, Spain, Aug. 2009-Feb.2010

Distinguished Achievement Award for teaching (College level), AFS, TAMU, 2005

Ford Fellow, College of Engg., TAMU 2004, TEES Fellow, College of Engg., TAMU, 2001, Neely Faculty Fellow, College of Engg., TAMU, 1999

Outstanding Professor Award, Dept. of ECE, TAMU, 2003-04, 2014-15

Outstanding Professor Award, IEEE Student branch, TAMU, 1997-1998

NSF Career Award (1996-2000)

5 Patents and an IBM Plateau Invention Achievement Award

IBM Graduate Fellowship (1988-90)

Presidential Silver Medal, Indian Institute of Technology, Kharagpur, India (May 86)

Research Interests:

Storage Systems, Cybersecurity, Computer Networks and Computer Architecture

Work Experience:

Truchard Foundation Chair Professor in ECE, Texas A&M Univ., Sept. 2023-Present.
Associate Dean for Research, College of Engineering, Texas A&M Univ., Apr. 2016 -Aug. 2021
Associate Agency Director for Strategic Initiatives and Centers, TEES, Aug. 2016 - Aug. 2021
Assistant Agency Director for National and Global Initiatives, TEES, June 2014 - Apr. 2016
J.W. Runyon Professor, Dept. of ECE., Texas A&M University, Oct. 2008-Aug. 2023

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Professor, Dept. of Elec. and Compu. Engg, Texas A & M University, Sep. 2004 -Sep. 2008
Associate Professor, Dept. of Elec. Engg, Texas A & M University, Aug. 1995 - Aug. 2004
Research Staff Member, IBM Almaden Research Center: Aug. 1990 - Aug. 1995

Professional Activities:

- **Fellow** of the IEEE Computer Society, member of ACM SIGARCH
- Associate Editor, IEEE/ACM Transactions on Networking, 2014-2016
- Member, Advisory Board of Center for Hyper Scale Micro Data Center, South Korea
- External Evaluator, Faculty Promotion Committee, University of Jordan, 2012
- Program Committee Member, INFLOW Workshop, 2016
- Program Committee Member, NVM Workshop, 2011, 2015, 2016
- Program Committee Member, IEEE ANTS Conf., 2014
- Program Committee Member, Parallel Data Storage Workshop, 2012-2014
- Member, Information Technology Research Academy Strategy Formulation, India, Oct. 2011
- Review Chair, Los Alamos National Lab Research Information Institute program, Apr. 2011
- Program Committee Member, USENIX HotStorage Conf., 2010-2012
- External Evaluator, Faculty Search Committee, ICS-FORTH, Crete, Greece, 2009
- Program Co-chair, IEEE Broadnets 2008
- Area Lead, IEEE Infocom 2008
- Program Committee Member, USENIX FAST Conf. 2009
- Panels Co-Chair, COMSWARE 2008
- Program Committee Member, ICDCS 2008, 2013
- Program Committee Member, IEEE ICNP 2008
- Program Committee Member, COMSNETS 2009-2013, 2015
- Program Committee Member, COMSWARE 2007-2008
- Program Committee Member, Int. Workshop Visualization for Computer Security, 2006
- Program Committee Member, CoNEXT Conference, 2006, 2007, 2009
- Program Committee Member, Int. Workshop on QOS, 2006-2011
- Program Committee Member, IEEE Infocom, 2005-2015
- External Reviewer, Faculty promotion Committee, KAIST, Korea, 2003
- Technical Consultant, EMC Corp., 2001-2003

- Educational Content Expert on Computer Networking, Jones International University
- Member, Technical Advisory Board, Netgeo Inc., Mountain View
- Technical Adviser, TBD Networks
- Proposal Reviewer, Netherlands NSF
- Program Committee member, ACM Multimedia Conference, 2002
- Program Committee member, MCW-2001, Multimedia on Clusters of Workstations, 2001
- Program Committee member, IEEE Int. Conf. on Multimedia Comp. and Systems, 1999
- Panel Chair, IEEE Conf. High Performance Computer Architecture, 1999
- Program Committee member, High Performance Computing, 1999
- Program Committee member, Int. Conf. on Parallel Processing, 1998
- Tutorial Chair, IEEE Conf. on Multimedia Computing Systems, 1998
- Panel Chair, Int. Conf. on Parallel Processing, 1995
- Program Committee member, Int. Conf. on Parallel Processing, 1995
- Program track coordinator, Hawaii Int. Conf. on Systems and Sciences, 1994

Patents:

- N. Annapareddy, C-C Chou, C. Tirumalasetty, P. Gratz and A. Abouelwafa, "Faster Page Handling in Computer Systems", US Patent Number 11474952B2, received Oct. 18 2022.
- N. Annapareddy, J. Brady, D. Finney, M. Hartung, M. Ko, J. Menon, and D. Nowlen, Conflict resolution in multi-node communication network, U.S. Patent number: 6,101,194, received Aug. 8, 2000.
- N. Annapareddy, J. Brady, D. Finney, R. Freitas, M. Ko, and M. Rayfield, Method and System for message status reporting in a multi-node communication network, U.S. Patent number: 5,717,862, received Feb. 10, 1998.
- N. Annapareddy, D. Finney, M. Jenkins, L. Kessler, A. Lang, S. Liang, D. Mora, D. Plomgren, P. Urbisci and A. Walls, Interconnection network for a multi-nodal data processing system which exhibits incremental scalability, US Patent number: 5,602,044, received Feb. 11, 1997.
- N. Annapareddy, J. Brady and D. Finney, Adpative and Dynamic message routing system for multinode wormhole networks, US Patent number: 5,602,839, Received Feb. 11, 1997.
- N. Annapareddy, J. Brady, D. Finney, R. Freitas, M. Hartung, M. Ko, N. Mendelson, J. Menon, D. Nowlen and S-Y Tzou, System and method using chaines structured queues for ordering of message delivery between connected nodes wherein unsuccessful message portion is skipped and retried, US Patent number: 5,577,211, Received Nov. 19, 1996.

Archival Publications:

- Singla, R.[1], Reddy,A. L. Narasimha, Bettati, R., Alnuweiri, H., Toward a Multidimensional Analysis of the National Vulnerability Database, IEEE Access, Volume 11, 2023.
- Tiwari, A., Wang, Y., Saleeby, K., Reddy, A.L. Narasimha, Bukkapatnam, S., Learning Digital Emulators for Closed Architecture Machine Tool Controllers, Journal of Manufacturing Letters, 2023, also in Proc. of North American Manufacturing Conference (NAMRC), 2023.
- Qin, Mian.[1], Zheng, Qing., Lee, Jason., Settlemyer, Bradley., Wen, Fei., Reddy, Narasimha., Gratz, Paul., "KVRangeDB: Range Queries for A Hash-Based Key-Value Device, ACM Transactions on Storage, Vol. 1, No. 1, article to appear Jan. 2023.
- Tirumalasetty, Chandrahas.[1], Chou, Chih Chieh.[1], Reddy, Narasimha., Gratz, Paul., and Abouelwafa, Ayman., "Reducing Minor Page Fault Overheads through Enhanced Page Walker, in ACM Transactions on Architecture and Code Optimization, July 2022.
- Wen, Fei., Qian, Mian., Gratz, Paul., and Reddy, A. L. Narasimha, "Softare hint-driven data management for hybrid memory in mobile systems", accepted for publication in ACM Transactions on Embedded Computer Systems, Nov. 2021.
- Mahesh, P., Tiwari, A., Jin, C., Kumar, P.R., Reddy, A. L. N., Bukkapatnam, S., Gupta, N., and Karri, R., "A Survey of Cybersecurity of Digital Manufacturing", Accepted for publication in Proceedings of IEEE, October 2020.
- Tiwari, A., Reddy, A. L. Narasimha, and Bukkaparnam, S., "Cybersecurity assurance in the emerging Manufacturing-as-a-Service (MaaS) paradigm: A lesson from the video streaming industry, ASTM Journal on Smart and Sustainable Manufacturing Systems, SSMS-2020-0066.R1, October 2020.
- Wen, F., Qin. M.[1], Gratz, P., and Reddy, A. L. Narasimha, "Hardware memory management for future mobile hybrid memory systems", accepted for publication in IEEE Trans. on CAD, Nov. 2020
- Chou, C-C[1], Jung, J., Reddy, A. L. Narasimha, Gratz, P., and Voight, D., "Virtualize and Share nonvolatile memories in user space", CCF Transactions on High Performance Computing, Jan 2020
- Moon, S.[1], and Reddy, A. L. Narasimha, "Does RAID improve lifetime of SSD Arrays?", accepted for publication at ACM Transactions on Storage., Apr. 2016.
- Fedorov, V.[1], Qiu, S.[1], Reddy, A. L. Narasimha and Gratz, P., "ARI: Adaptive LLC-memory traffic management", ACM Transactions on Architecture and Code Optimization (TACO), Dec. 2013.
- Wu, X[1], Qiu, S.[1], and Reddy A. L. N., "SCMFS: A file system for Stroage Class Memory and its extensions", accepted for publication in ACM Transactions on Storage, Jan. 2013.
- Wu, X[1] and Reddy A. L. N., "A novel approach to manage hybrid storage system", Journal of communications, vol.7., July 2012.
- Shin, S., Gu, G., Reddy, A. L. N., "A large-scale study of Conficker", IEEE Trans. Information Forensics and Security, June 2012.

- Yadav, S[1], Reddy, A. K.[1], Reddy, A. L. Narasimha and Ranjan, S., "Detecting algorithmically generated malicious domain names", ACM/IEEE Trans. on Networking, 2012.
- Lee, Y-O.[1] and Reddy, A. L. Narasimha, "Algorithms for disjoint path construction for failure recovery and multipath routing", to appear in Journal on Computer Networks, 2012.
- Garrison, J.[1], and Reddy, A. L. Narasimha, "Umbrella File System: Storage management across heterogeneous devices", ACM Transactions on Storage, vol.5, no.1, Mar. 2009.
- Kim, S.[1], and Reddy, A. L. Narasimha, "Statistical Techniques for detecting Traffic Anomalies through Packet header data" IEEE/ACM Transactions on Networking (ToN), July 2008.
- Liu, Y.[1], and Reddy, A. L. N., "Multihoming route control among a group of multihomed stub networks", Journal on Computer Communications, Nov. 2007.
- Bhandarkar, S.[1], Reddy, A. L. N., Allman, M., Blanton, E., "Improving the robustness of TCP to non-congestion events", IETF(Internet Engineering Task Force) RFC 4653, August 2006.
- Kang, S[1]., Reddy, A. L. N., "An Approach to Virtual Allocation in Storage Systems", in ACM Transactions on Storage, Nov. 2006, Vol.2, pages:371-399.
- Kim, S[1]., Reddy, A. L. N., "Image based Anomaly detection: Design, Algorithms and Evaluation", IEEE Journal on Selected Areas of Comm., vol. 24.10, October 2006, 1942-1954.
- Bhandarkar, S.[1], Reddy A. L. N., "LTCP: A layered framework for improving TCP's performance in high-speed networks", in ACM CCR, Jan. 2006.
- Kwon, D.W., Ko, M., Vannucci, M., Reddy, A. L. N., and Kim, S.[1], "Wavelet methods for the detection of anomalies and their application to network traffic analysis", Quality and Reliability Engineering International (QREI) 2006, 22, pages: 1-17.
- Reddy, A. L. N., Wyllie, J., and Wijayaratne, R.[1], "Scheduling for multimedia servers", invited submission for the premier issue of ACM Transactions on Multimedia, March 2005. Cited for being one of the most influential papers from ACM Multimedia conference 1993.
- Kim, S[1]., and Reddy, A. L. N., "Statistical techniques for detecting traffic anomalies through packet header data", accepted for publication in ACM/IEEE transactions on Networking, January 2007.
- Garg, A[1]., and Reddy, A. L. N., "Mitigating Denial of service attacks through QOS regulation", in the special issue of Journal of Microprocessors and Microsystems on secure platforms, May 2004.
- Bhandarkar, S.[1], Sadry, N.[1], Reddy A. L. N., Vaidya, N., "TCP-DCR: A novel protocol for tolerating wireless channel errors", IEEE Transactions on Mobile Computing, March 2005.
- Zhao, Z.[1], Ametha. J., Swaroop. D. and Reddy A. L. N., "A method for estimating non-responsive traffic at a router", ACM/IEEE Trans. on Networking, Aug. 2004.
- Yeom, I[1]. and Reddy A. L. N., "Adaptive Marking for Assured Forwarding Service" IEEE Communication Letters, Oct. 2002.

- Yeom, I[1]. and Reddy A. L. N., "Providing consistent delay differentiation" accepted by IEICE Transactions on Communications, Sept. 2002.
- Ma, X[1]. and Reddy A. L. N., "Multiview Storage Systems", IEEE Trans. on Parallel and Distributed Systems, Apr. 2003.
- Yeom, I[1]. and Reddy A. L. N., "Marking for QOS Improvement", Elsevier Journal of Computer Communications, pages 35-50, vol. 24, no.1, Jan 2001.
- Yeom, I[1]. and Reddy, A. L. N., "Modeling TCP behavior in a differentiated services network", ACM/IEEE Transactions on Networking, vol. 9, no.1, pages 31-46, Feb. 2001.
- Ma, G.[1], Khaleel, A[1]. and Reddy, A. L. N., "Evaluation of storage systems based on network-attached disks", IEEE Transactions on Parallel and Distributed Systems, September 2000, 956-968.
- Wijayaratne, R[1]. and Reddy, A. L. N., "Providing QOS guarantees for disk I/O", Proc. of ACM/Springer Journal on Multimedia Systems, Jan 2000, vol.8, no.1, pages:57-68.
- Yeom, I[1]. and Reddy, A. L. N. , "ENDE: An End-to-end Network Delay Emulator" , Journal on Multimedia Tools and Applications, Kluwer Publishers, vol. 14, no.3, June 2001.
- Reddy, A. L. N. and Upfal, E., "Real-time communication scheduling in a multicomputer video server", *Journal on Parallel and Distributed Computing*, Sep. 1999., vol.58, pages: 425-445.
- Reddy, A. L. N. and Wyllie, J., "I/O issues in a multimedia system", *IEEE Computer*, Mar. 1994, vol.27, no.3, pages:69-74.
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- Reddy, A. L. N. and Banerjee, P., "Algorithm Based Fault Detection Techniques for Signal Processing Applications", *IEEE Transactions on Computers*, Oct. 1990, vol.39, no.10, pages: 1304-1308.
- Reddy, A. L. N. and Banerjee, P., "'Design, Analysis and Simulation of IO Architectures for Hypercube Multiprocessors" *IEEE Transactions on Parallel and Distributed Systems*, April 1990, vol.1, no.2, pages:140-151.
- Reddy, A. L. N. and Banerjee, P., "An evaluation of multiple-disk IO systems" *IEEE Transactions on Computers*, Dec. 1989, vol. 38, no.12, pages:1680-1690.
- Reddy, A. L. N. and Banerjee, P., "A Study of Parallel Disk Organizations" *ACM Computer Architecture News*, Sept. 1989.
- Abraham, J., Banerjee, P., Chen, C.Y., Fuchs, W.K., Kuo, S. Y. and Reddy, A.L.N., "Fault Tolerance Techniques for Systolic Arrays", *IEEE Computer*, July 1987, vol.20, no.7, pages:65-85.
- Chakraborti, N.B., Soundararajan, J.S.and Reddy, A. L. N.,"An Implementation of Mixed-Radix Conversion for Residue Number Applications", *IEEE Transactions on computers*, August 1986, vol. C-35, no.8, pages:762-764.

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Publication of Books or Book Chapters:

- Bhandarkar, S.[1], and Reddy, A. L. N., "TCP in Wireless Networks", invited book chapter in Encyclopedia on wireless and mobile communications", CRC Press, Dec. 2007.
- I. Yeom[1] and A. L. Narasimha Reddy, "Differentiated Services", invited book chapter in Wiley's Encyclopedia on Communications, 2002.
- A. L. Narasimha Reddy and J. Wyllie, "Disk Scheduling in a Multimedia I/O System", reproduced as a book chapter in Readings in Multimedia Computing and Networking, Morgan Kaufmann Publishers, Editors: Kevin Jeffay and HongJiang Zhang, Summer 2001.
- Reddy, A. L. N. and Wijayaratne R., "Scheduling for integrated service in multimedia systems", invited book chapter in *Multimedia Handbook*, CRC Press, Dec. 1997.
- Reddy, A. L. N. and Haskin R., "Video Servers", invited book chapter in *Communications Handbook*, CRC Press, 1996.
- Reddy, A. L. N., "Improving the interactive responsiveness in a video server", invited book chapter in *Multimedia Information Storage and Management*, Kluwer Academic Publishers, Dec. 1996.
- Reddy, A. L. N., "Scheduling in Multimedia Systems", invited book chapter in *Design and Applications of Multimedia Systems*, Kluwer Academic Publishers, Aug. 1995.

Rigorously Refereed Conference Publications:

- Singla, R[1]., Srinivasa, S., Reddy, A. L. Narasimha, Pedersen, J.M., Vaselomanolakis, E., Bettati, R., An analysis of war impact on Ukrainian critical infrastructure through network measurements, Proc. of IEEE/IFIP Network Traffic Measurement and Analysis (TMA) Conference, June 2023.
- Tiwari, A., , Villasenor, E. J., Gupta, N., Reddy, A. L. Narasimha, Karri, R,, and Bukkaptnam, Satish T. S. "Protection against Counterfeiting Attacks in 3D Printing by Streaming Signature-embedded Manufacturing Process Instructions", In Proceedings of the 2021 Workshop on Additive Manufacturing (3D Printing) Security (AMSec 21), 2021,
- Qin, M.1, Reddy, A. L. Narasimha, Gratz, P., Pitchumani, R,, Ki, Y-S., "KVRAID: High Performance,Write Efficient, Update Friendly Erasure Coding Scheme for KV-SSDs", accepted at ACM Systor Conference., June 2021.
- Wen, F., Qin, M.1, Gratz. P., and Reddy, A. L. Narasimha, "OpenMem: Hardware/Software Cooperative Management for Mobile Memory System", accepted at ACM/IEEE Design Automation Conference, Dec. 2021.
- Wen, F., Qin, M.1, Gratz. P., and Reddy, A. L. Narasimha, "FPGA-based Hyrbid Memory Emulation System", Field Programmable Logic and applications Conference, Aug. 2021.
- Qin, M.1, Lee. J-H., Pitchumani, R,, Ki, Y-S., Reddy, A. L. Narasimha, Gratz, P., "A Generic FPGA Accelerator for Minimum Storage Regenerating Codes", Proceedings of the 25th Asia and South Pacific Design Automation Conference, January, 2020.

- Chou, C-C.,1, Chen, Y., Milojicic, D., Reddy, A. L. Narasimha, Gratz, P., "Optimizing Post-Copy Live Migration with System-Level Checkpoint Using Fabric-Attached Memory, 2019 IEEE/ACM Workshop on Memory Centric High Performance Computing (MCHPC), Denver, CO, USA, 2019, pp. 16-24.
- Chou, Chih Chieh[1], Jung, J[1], Reddy, A.L. Narasimha, Gratz, Paul V., and Voight, Doug, "vNVML: An Efficient User Space Library for Virtualizing and Sharing Non-Volatile Memories", IEEE 35th International Conference on Mass Storage Systems and Technology, 2019.
- Zheng, Z.[1], Webb, A.[1], Reddy, A. L. Narasimha, Bettati, Riccardo, "IoTAegis: A Scalable Framework to Secure the Internet of Things", Invited Paper at IEEE ICCCN, July 2018.
- Zheng, Z.1, Reddy, A. L. Narasimha, "Safeguarding Building Automation Networks: THE-Driven Anomaly Detector Based on Traffic Analysis", IEEE ICCCN (Invited Paper), July 2017.
- Fedorov, V[1]., Kim, J., Qin, M[1]., Reddy, A. L. Narasimha and Gratz, P., "Speculative Paging for future NVM and SSD", Proc. of MEMSYS Conference, Oct. 2017.
- Zhang, Z[1], Jin, S., Bettati, R., Reddy, A. L. Narasimha, "Securing Cyber-Physical Systems with Adaptive Commensurate Response", Proc. of IEEE CNS, Oct. 2017.
- Zhang, Z[1], and Reddy, A. L. Narasimha, "Safeguarding Building Automation Networks: THE-Driven Anomaly Detector Based on Traffic Analysis", Invited Paper at ICCCN 2017, July 2017.
- Zhang, Z[1], and Reddy, A. L. Narasimha, "Towards Improving Data Validity of Cyber-Physical Systems through Path-Redundancy", 3rd ACM Cyber-Physical Systems Security Workshop, April 2017.
- Kim, J., Pugsley, S., Gratz, P., Reddy, A. L. N., Wilkerson, C., and Chisti, Z., "Path Confidence based Lookahead Prefeteching", MICRO Conf., Oct. 2016. **Best Paper Nomination**.
- Webb, A.[1] and Reddy, A. L. Narasimha, "Finding proxy users at the service using anomaly detection", IEEE Conf. on Communications and Network Security, Oct. 2016.
- Moon, S[1]., and Reddy, A. L. Narasimha, "Adaptive policies for balancing performance and lifetime of mixed SSD arrays through workload sampling", IEEE Mass Storage Symposium, April 2016
- Fedorov, V.[1], Reddy, A. L. Narasimha and Gratz, P., "Shared Last-Level Caches and The Case for Longer Timeslices", MEMSYS Conference, Oct. 2015
- Kim, J., Fedorov, V.[1], Gratz, P., and Reddy, A. L. Narasimha, "Dynamic Memory Pressure Aware Ballooning", MEMSYS Conference, Oct. 2015
- Fedorov, V.[1], Qiu, S.[1], Reddy, A. L. Narasimha and Gratz, P., "ARI: Adaptive LLC-memory traffic management", HiPEAC Conf., Jan. 2014.
- Moon, S[1] and Reddy, A. L. Narasimha, "Don't let RAID raid the lifetime of your SSD array", Proc. of USENIX HotStorage Conf., June 2013.
- Qiu, S[1], and Reddy, A. L. Narasimha, "NVMFS: A hybrid file system for improving random write in NAND-flash SSD", Proc. of Mass Storage Systems Symposium, May 2013.

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- Lee, Y-O[1], and Reddy, A. L. Narasimha, "Multipath Routing for Reducing Network Energy", IEEE Greencom Conf., Sep. 2012.
- Qui, S[1]., Reddy, A. L. Narasimha, "Exploiting superpages in a nonvolatile memory file systems", IEEE Mass Storage Symposium, Apr. 2012.
- Moon, S[1]., Reddy, A. L. Narasimha, "Write amplification due to ECC on flash memory or leave those bit errors alone", IEEE Mass Storage Symposium, Apr. 2012.
- Wu, X[1]., Reddy, A. L. Narasimha, "SCMFS: A file system for storage class memory", ACM/IEEE Supercomputing Conf. SC11, Nov. 2011.
- Yadav S.[1], Reddy, A. L. Narasimha, "Winning with DNS Failures: Strategies for faster botnet detection", SecureComm Conf., Sep. 2011.
- Lee, Y-O[1], Rengarajan, B., and Reddy, A. L. Narasimha, "Reaching approximate Wardrop equilibrium at reduced cost of link state updates" , COMSNETS Conf., Jan 2011.
- Qian,B[1]., and Reddy, A. L. Narasimha, "Measurement and performance study of PERT for on-demand video streaming" , Pfldnet workshop, Nov. 2010.
- Yadav, S[1], Reddy, A. K.[1], Reddy, A. L. Narasimha and Ranjan, S., "Detecting algorithmically generated malicious domain names" , Proc. of Internet Measurement Conference, Nov. 2010.
- Wu, X[1]., Reddy, A. L. Narasimha, "Exploiting concurrency to improve latency and throughput in a hybrid storage system", **Best Paper Nomination**, IEEE MASCOTS Conf., Aug. 2010.
- Devakota, P[1]., Reddy, A. L. Narasimha, "Performance of Quantized Congestion Notification in TCP Incast Scenarios of Data centers", IEEE MASCOTS Conf., Aug. 2010.
- Lee, Y-Oh[1]., Reddy, A. L. Narasimha, "Disjoint Multi-Path Routing and Failure Recovery", Proc. of ICC, May 2010.
- Yadav, S[1]., Reddy, A. L. Narasimha, "DNS Anomaly detection with NS and AS information", IASTED Conf. on Network Security, Nov. 2010.
- Wu, X[1]., Reddy, A. L. Narasimha, "Managing storage space in a flash and disk hybrid storage system ", IEEE MASCOTS Conf., Oct. 2009.
- Podduturi, V., Kim, Y., Shakkottai, S., Reddy, A. L. Narasimha, "MultiTrack: A delay and cost aware P2P Overlay architecture", ACM Sigmetrics, June 2009.
- Kotla, K[1]., Reddy, A. L. N., "Making a delay-based protocol adaptive to heterogeneous environments", Proc. of IwQOS, June 2008.
- Kang, S[1]., Reddy, A. L. N., "User-centric data migration in networked storage systems", Proc. of IPDPS, April 2008.
- Bhandarkar, S[1]., Reddy, A. L. N., Zhang, Y., Loguinov, D.,"Emulation of AQM at end hosts", Proc. ACM Sigcomm, Aug. 2007.
- Bhandarkar, S[1]., Reddy, A. L. N., "Robustness to packet reordering in high-speed networks", Proc. of Pfldnet, Feb. 2007.

- Al-Najjar, C[1]., Reddy, A. L. N., "A service provider's approach to improving performance of aggregate voice-over-IP traffic", Proc. of IWQOS, June 2006.
- Kim, S[1]., Reddy, A. L. N., "Netviewer: A Network traffic visualization and analysis tool", Proc. of USENIX LISA Conference, Dec. 2005, 185-196.
- Liu, Y[1], and Reddy A. L. N., "Routing among a group of multi-homed stub networks", Proc. of Globecom, Dec. 2005.
- Bhandarkar, S[1]., Reddy, A. L. N., "LTCP: A layered approach to TCP for high-speed networks", PFLDNet, Feb. 2005.
- Kim, S[1]., Reddy, A. L. N., "Modeling network traffic as images", ICC, May 2005.
- Kim, S[1]., Reddy, A. L. N., "A study of analyzing network traffic as images in real-time", IEEE Infocom, March 2005.
- Kim, S[1]., Reddy, A. L. N., "Real-time detection and containment of network attacks using QOS regulation", Proc. of ICC, May 2005.
- Kang, S[1]., Reddy, A. L. N., "Virtual Allocation: A scheme for flexible storage allocation" OASIS workshop at ASPLOS, Oct. 2004.
- Liu, Y[1], and Reddy A. L. N., "A fast rerouting scheme for OSPF/IS-IS networks", Proc. of ICCCN, Oct. 2004.
- Achanta, P.[1], and Reddy A. L. N., "LRU-FQ: Design and Evaluation of a Partial State Router", Proc. of ICC 2004, June 2004.
- Zhao, Z[1]., Reddy, A. L. N., "Impact of bandwidth-delay product and non-responsive flows on quueue management schemes", Proc.of ICC 2004, June 2004.
- Bhandarkar, S[1]., Reddy, A. L. N., "TCP-DCR: Making TCP robust to non-congestion events", Proc. of Networking 2004, May 2004.
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- Ma, X[1]., and Reddy, A. L. N., "SPIRAL: A novel third party transfer scheme for network attached devices", IEEE Mass Storage Symposium, April 2003.
- Zhao, Z[1]., Ametha. J., Swaroop. D. and Reddy A. L. N., "A method for estimating non-responsive traffic at a router", ACM Conf. on Sigmetrics, June 2002.
- Garg, A[1]., and Reddy, A. L. N., "Mitigating Denial of service attacks through QOS regulation", IwQoS workshop, May 2002.
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- Smitha[1] and Reddy, A. L. N., "LRU-RED: An active queue management scheme to contain high bandwidth flows at a congested router", in IEEE Globecomm Conference, Nov. 2001.

- Smitha[1], Kim, I[1]., and Reddy, A. L. N., "Identifying long term high rate flows at a router", in Proc. of High Performance Computing, Dec. 2001.
- Yeom, I[1]., and Reddy, A. L. N., "Adaptive marking for aggregated flows", in Proc. of IEEE Globecom, Nov. 2001.
- Gopalakrishnan, S[1]. and Reddy, A. L. N., "SACRIO: An active buffer management scheme for Differentiated Service Networks", Proc. of NOSSDAV, June 2001.
- Ma, X[1]. and Reddy, A. L. N., "MVSS: MultiView Storage Systems", Proc. of Int. Conf. on Distributed Computer Systems (ICDCS), Apr. 2001.
- Khaleel, A[1]. and Reddy, A. L. N., "Evaluation of Request and data distribution polices in a clustered server", Proc. of High Performance Computing, Dec. 1999.
- Yeom, I[1]. and Reddy, A. L. N., "Realizing throughput guarantees in a differentiated services network", Proc. of IEEE Int. Conf. on Multimedia Computing and Systems, June 1999.
- Wijayaratne, R[1]., Reddy, A. L. N., "Integraed QOS management for disk I/O", Proc. of IEEE Int. Conf. on Multimedia Computing and Systems, June 1999.
- Yeom, I[1]. and Reddy, A. L. N., "Impact of marking strategy on aggregated flows in a differentiated-services network", Proc. of IEEE International Workshop on QOS (IwQOS 99), June 1999.
- Tong, D[1]. and Reddy, A. L. N., "QOS Enhancement with Partial Sate", Proc. of IEEE International Workshop on QOS (IwQOS 99), June 1999.
- Gupta, S[1]. and Reddy, A. L. N., "IPRP: A Client-oriented IP Redirection mechanism", Proc. of IEEE Infocom Conf., March 1999.
- Wijayaratne, R[1]. and Reddy, A. L. N., "Techniques for improving the throughput of VBR streams", Proc. of ACM/SPIE Multimedia Computing and Networking, Jan. 1999.
- Ma, G[1]. and Reddy, A. L. N., "An evaluation of storage systems based on network-attached disks", Proc. of ICPP Conf., Aug. 1998.
- Reddy, A. L. N., "Effectiveness of caching policies for a web server", Proc. of High Performance Computing, Dec. 1997.
- Reddy, A.L.N., "Caching strategies for a multimedia server", Proc. of IEEE Int. conf. on Multimedia Computing and Systems, June 1997.
- Reddy, A. L. N., "Improving Latency in an Interactive Video server", Proc. of SPIE conf. on Multimedia Computing and Networking, Feb. 1997.
- Reddy, A.L.N., "Movie and communication scheduling on a multiprocessor video server system", Proc. of *IEEE Int. Conf. on Multimedia Comput. and Systems*, May. 1995.
- Reddy, A.L.N., Wyllie, J., "Disk Scheduling in a Multimedia I/O System", Proc. of *1st ACM Conf. on Multimedia*, Aug. 1993. Included as a chapter in "A guided tour of multimedia systems and applications", IEEE Press, 1995. Translated into Japanese by *Nikkei Electronics*, a Japanese technical magazine. To be included as "*one of the most influential papers*" in ACM Transactions on Multimedia, Applications and Communications.

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- Chandy, J., and Reddy, A.L.N., " Failure evaluation of disk array organizations", Proc. of *Int. Conf. on Distributed Computing Systems*, May 1993.
- Reddy, A.L.N. and Freitas, R., "Fault-tolerance of adaptive routing algorithms in multicomputers", Proc. of *4th IEEE Symp. on Parallel and Distributed Processing*, Dec. 1992.
- Reddy, A.L.N., "A Study of IO System Organizations", Proc. of *ACM Int. Symp. on Computer Architecture*, May 1992.
- Reddy, A.L.N., "Reads and Writes: When IOs aren't the same", Proc. of Hawaii Int. Symp. on Systems and Sciences, Jan. 1992.
- Reddy, A.L.N., Banerjee, P. and Chen, D.K., "Compiler Support for Parallel I/O Operations", Proc. of *Int. Conf. on Parallel Processing*, Aug. 1991.
- Reddy, A. L. N. and Banerjee, P., "Gracefully Degradable Disk Arrays", Proc. of *Int. Symp. on Fault Tolerant Computer Systems*, June 1991.
- Reddy, A. L. N. and Banerjee, P., "A Study of IO Behavior of Scientific Applications on A Multiprocessor", Proc. of *ACM Int. Symp. on Computer Architecture*, June 1990
- Reddy, A. L. N. and Banerjee, P., "Performance evaluation of multiple-disk IO systems", Proc. of *Int. Conf. on Parallel Processing*, Aug. 1989.
- Reddy, A. L. N. and Banerjee, P., "IO issues in hypercubes", Proc. of *ACM Int. Conf. on Supercomputing*, June 1989.
- Reddy, A. L. N., Banerjee, P. and Abrham, S.G., "IO embedding in Hypercubes", Proc. of *Int. Conf. on Parallel Processing*, August 1988.
- Reddy, A. L. N. and Banerjee, P., "A Fault-Secure Dictionary Machine", Proc. of *3rd International Conference on Data Engineering*, Feb. 1987.

Other Publications:

- Kim, J., Gratz, P., and Reddy, A. L. Narasimha, " Lookahead Prefetching with Signature Path", ACM ISCA Workshop on Data Prefetch Competition, June 2015
- Huang, B[1]., Wang. S1., and Reddy, A. L. Narasima, "Who is Hiring Whom: A New Method in Measuring Graduate Programs", ASEE conference, June 2015.
- Singh, A.[1], and Reddy, A. L. Narasimha, "Multi path PERT", **Invited Paper** at Int. Conf. on Computer Communications and Networks, July 2013.
- Amaleswaram, A.[1], Reddy, A. L. N., Yadav, S.[1], Gu. G., Yang, C., "CATS: Characterizing Automation of Twitter Spammers", **Invited Paper** at Int. COMSNETS conf., Jan. 2013.
- Wu, X.[1], and Reddy, A. L. N., "Data organization in a hybrid storage system", **Invited Paper** at Int. Conf. on Computing, Networking and Communications, ICNC'12, Feb. 2012.
- Yin, Z.[1], Hasari, C., Al-Nuweiri, H., and Reddy, A. L.N., "'Improving the Performance of Delay Based Protocol in Delivering Real Time Media via Early Retransmission", IEEE ICT Conf., Apr. 2011.

- Yin, Z.[1], Al-Nuweiri, H., and Reddy, A. L.N., "Performance of Early retransmission scheme in streaming media", IEEE ICT Conf., Apr. 2010.
- Kim, S[1]., and Reddy, A. L. N., "An evaluation of the effectiveness of measurement-based anomaly detection techniques", ADSN workshop, held in conjunction with ICDCS, June 2006.
- Vellanki, S[1]., and Reddy, A. L. N., "Improving service availability during link failure transients through alternate routing", Tech. Report, Texas A & M University, Feb. 2003.
- Ma, X[1]., and Reddy, A. L. N., "Implementation and Evaluation of an active storage system prototype", Workshop on novel uses of System Area Networks, Feb. 2002.
- Reddy, A.L.N., " An evaluation of multiprocessor video server system", *IBM Confidential report*, June 1994.
- Menon, J., Reddy, A.L.N., Treiber, K. and Tzou, S.Y., "Daisy: A Novel Heirachical Storage Management System, Functional Specification", *IBM Confidential Report*, 77 pages, Jan 1994.

Recent Presentations:

- Tutorial on Network Security at Int. Conference on Information Security, Hyderabad, India, Dec. 2014
- Invited talk at IEEE Communications Soceity, Hyderabad, India, August 2014
- Invited talk at University of Texas at San Antonio, Nov. 2013
- Presentation at Flash Summit, Aug. 2013
- Invited talk at Georgia Tech., May 2013
- Keynote talk at Int. Conf. on Information Technology: New Generations, Las Vegas, April 2013
- Invited talk at COMSNETS Conf., Bangalore, India, Jan. 2013
- Invited talk at Int. Conf. on Networking and Communications, Maui, Feb. 2012
- Invited talk at NVRAMOS 2011, Jeju island, South Korea, Nov. 2011
- Invited talks at Korea University, Ajou University, Samsung and ADD, Korea, Nov. 2011
- Keynote talk at IEEE Int. Symp. on Computers and Communications, Italy, June 2010
- Catedra Series talk at University of Carlos III, Dec. 2009, Madrid, Spain
- Invited talk at Thomson Research, Paris, France, October 2009
- Invited talk at Telefonica Research, Barcelona, Spain, September 2009
- Distinguished Seminar Series, IBM Austin Research Lab, May 1 2008
- Invited talk at University of Illinois, November 2006
- Invited talk at Cisco, January 2005

- Invited talk at University of Birmigham, UK, June 2004
- Invited talk at Cisco Systems, San Jose, June 2002
- Invited talk at Juniper Networks, Mountain View, June 2002
- Invited talk at Univ. of California at Riverside, June 2002
- Invited talk at Nortel Networks, Santa Clara, June 2000
- Invited talk at Juniper Networks, Mountain View, June 2000
- Talk at Internet Engineering Task Force, Washington D.C., Oct. 1999
- Invited talk at EMC Corp., Boston, Aug. 1999
- Tutorial on "Scheduling for Multimedia Applications", presented at IEEE Int. Conf. on Multimedia Computing and Systems, June 1999
- Tutorial on High-Performance I/O at IEEE/ACM Int. Conf on Computer Architecture,Atlanta, May 1999
- Invited talk at AT & T Research Center, Florham Park, March 1999
- Invited talk at Bell Labs Research Center, Murray Hill, March 1999
- Invited talk at EMC Corp., Boston, Nov. 1997

Funding:

- "Distributed Key Value Storage Manager", NSF, PI, 2023-25.
- "Data Driven Cybersecurity Research Infrastructure for Smar Manufacturing", NSF, PI, 2023-25.
- "PETS: Programmable Extensible zero-Trust Security for working across 5G networks", NSF, co-PI, 2022-23.
- "Multi-layer Cybersecurity and Situational Awareness to Enhance Resiliency in Qatars Power Grid", Qatar National Research Fund, co-PI, 2022-27.
- "Storage systems for streaming applications, Samsung, PI, 2022-24.
- "High-performance storage systems", Los Alamos National Lab, PI, 2022-25.
- "Cooprative Research Agreement", Army Futures Command, Co-PI, 2019-24.
- "Protecting Building Automation Networks from insider threats", 2016, QNRF, lead PI.
- EMC, DELL, HPE and Samsung membership participation in NSF I/UCRC Center.
- "NSF I/UCRC Center on Intelligent Storage", 2014, NSF, lead PI.
- "Equipment Donation", Viking Technologies, 2013.
- "Emerging memory architectures for big memory applications", National Science Foundation, 2013-2016, co-PI.

- "Exploiting social communication channels against cyber criminals", National Science Foundation, 2012-2015.
- "Client interfaces to object storage systems", Argonne National Lab, 2012-2015.
- "Detecting malicious activities by analyzing social communication contexts", Qatar National Research Foundation, 2012-2015.
- "Network traffic analysis for botnet detection", Narus Inc., Research gift, 2009-2010.
- "Design and Analysis of new generation of protocols for triple-play networks", QNRF, Jan. 1. 2008 - Dec. 31 2010, Co-PI.
- "Dynamic allocation and data distribution in networked storage systems", National Science Foundation, Oct. 2007 - Sept. 2010, sole PI.
- "Active Data Systems", National Science Foundation, Sept. 2006 -Aug. 2009, sole PI.
- NSF REU grant, co-PI, 2004-2007.
- Network Elements based on partial state, Intel Corp., gift, Feb. 2003.
- Texas A & M University, "High Availability Infrastructure Laboratory", TITF Award, Sept. 2002 - Dec. 2003, PI with R. Bettati, M. Vannucci and D. Swaroop.
- "Secure Networked Storage Systems", National Science Foundation, Research Instrumentation grant, Sept. 2002- Sept. 2005.
- Texas Advanced Technology Program, "Network Architectures based on partial state", Jan. 2001 - Dec. 2002.
- "Fellowships for Computer Engineering", Department of Education, Aug. 2001- Aug. 2004, PI with R. Mercer and K. Watson.
- "QOS Enhancement with Partial state", National Science Foundation, June 2001-June 2004, sole PI.
- "Multiview Storage Systems", National Science Foundation, May 2001 - May 2004, sole PI.
- Equipment Donation, 3Ware Inc., Nov. 2000.
- "Scalable request-specific file service", National Science Foundation, Aug. 1999 - Aug. 2002, sole PI.
- Research gift, EMC Corp., 1998.
- "Scalable Multimedia Storage Server", Texas Higher Education Board, January 1996 - Dec. 1997, sole PI.
- "Scalable Storage Server for Multimedia and Scientific Applications", National Science Foundation, 1996-2000, sole PI.
- "Development of Novel Systems Software for Multimedia and High-performance computing", National Science Foundation, 1997-2000, PI along with R. Mercer, P. Cantrell, G. Choi and M. Lu.

- Equipment grant, Tandem Corporation, March 1997.
- Software donation, Microsoft Corporation, April 1997.

Teaching:

Redesigned the course ECEN 449 "Microprocessor Systems Design", Fall 2007.

Developed a new course ELEN 627 "Multimedia Systems and Networks".

Developed a freshman undergraduate course ENGR111 "Introduction to Electrical and Computer Engineering".

Developing a new graduate course on "Network systems security". Taught in Spring 2004, 2006.

Courses Taught: Undergradute Introduction to Electrical and Computer Engineering, Undergraduate Computer Architecture, Graduate Network Systems security, Graduate Computer Architecture, Graduate Computer Networks, Graduate Multimedia Storage and Delivery, Graduate Parallel Computer Systems, Graduate I/O and Memory Systems.

Student Advising:

- Caleb Norton, Ph.D. candidate, Aug. 2023-, Storage Systems
- Chris Baldwin, Ph.D. candidate, Aug 2021-, Memory Systems
- Susav Shresta, Ph.D. candidate, Aug 2021-, Systems support for Machine Learning.
- Chandrahas Tirumalasetty, Ph.D. candidate, Aug 2019-present, Memory Systems.
- Rishabh Singla, Ph.D. candidate, Aug 2017-Present, Network Security.
- Mian Qin, Ph.D., Aug 2016-Aug 2021, "Accelerating Storage Applications with Emerging Key Value Storage Devices", next at VmWare.
- Chih-Chieh Chou, Ph.D., Aug 2014-Jan. 2020, "Optimizing Emerging Memory Systems for Performance", next at Amazon.
- Zhiyuan Zheng, Ph.D., Aug. 2013 -Dec. 2017, "Protecting Cyber-Physical Systems With Special Emphasis On Building Automation Networks", next at Pinterest.
- Jaemin Jung, Postdoc, Oct. 2016-18, Storage systems, next at Samsung Research.
- Allen Webb, Ph.D. candidate, Jan. 2013-17, "Addressing Insider Threats From Smart Devices", next at Google.
- Viacheslav Fedorov, Ph.D., 2010 - 2016, "Memory Management for emerging memory technologies", later at NXP.
- Jongmin Gim, Postdoc, 2013-2015, Storage Systems Software, Later at Samsung Research Labs, California.
- Sangwhan Moon, Ph.D., 2010 - 2015, "Reliability of SSD Storage Systems", later at Riverbed Technology.

- Sheng Qui, Ph.D. 2013 "Integration of nonvolatile memory into storage hierarchy", later at Samsung Research Labs.
- Yong Oh Lee, Ph.D., May 2012, "Improving efficiency and effectiveness of multipath routing in computer networks", later at Samsung.
- Jagadeesh Dyaberi, Ph.D., Aug. 2011, "Networking and Storage support for on-demand video delivery", Purdue University, External thesis committee member.
- Sandeep Yadav, Ph.D., 2012, "Scalable techniques for anomaly detection", Dec. 2012, later at Dumballa.
- Xiaojin Wu, Ph.D., Flash and Disk Hybrid storage systems, Aug. 2011, later at Marvell Semiconductor.
- John Garrison, Ph.D. , "Umbrella File System: Managing heterogeneous storage devices File systems", Aug. 2009, later at DOD Labs, Tuscaloosa, Alabama.
- Sukwoo Kang, Ph.D., "Flexible space allocation and management in networked storage systems", May 2007, later at IBM Almaden Research Center.
- Sumitha Bhandarkar, Ph.D., "Congestion control algorithms for TCP in emerging networks", Aug. 2006, later at Motorola.
- Yong Liu, Ph.D., "Dynamic Routing protocols in multihomed networks", Dec. 2006, later at EMC Corp.
- Seong Soo Kim, Ph.D., "Real-time analysis of aggregate network traffic", May 2005, later at Samsung, Seoul, Korea.
- Zhili Zhao, Ph.D., May 2004, "Estimation and control of nonresponsive traffic", later at Intel.
- Xiaonan Ma, Ph.D., Aug. 2003, "Augmenting functionality at storage systems", later at IBM Almaden Research Center, San Jose.
- Ravi Wijayaratne, Ph.D., Dec. 2000, "PRISM: A file server architecture for providing integrated services", later at Quantum, San Jose.
- Ikjun Yeom, Ph.D., Dec. 2000, "Bandwidth assurance in differentiated services networks", later a faculty member at KAIST, South Korea.
- Daksh Vasistha, M.S., 2015-17, " Detecting Anomalies in Controller Area Network for Automobiles", next at Facebook
- Ayush Ruia, M.S., 2015, "Virtualization of nonvolatile memory", later at Microsoft.
- Bolun Huang, M.S. 2014, "Sentiment based classification of tweeters and university programs", later at Microsoft.
- Shyam Sambasivan, M.S. "Enhancements to SQLite library to improve performance on mobile platforms", Aug. 2013, later at Cisco.
- Ankit Singh, M.S., "Multipath Probabilistic Early Response TCP", Aug. 2012, later at Amazon.

- Cindy Cao, M.S., "SCMFS Performance Enhancement and Implementation on Mobile Platform", Aug. 2012, later at Microsoft.
- Amit Anand, M.S., "Proactive spammer detection on Twitter", Aug. 2012, later at Amazon.
- Bin Qian, M.S.. Aug. 2011, "Evaluation of Probabilistic Early Response TCP (PERT) for video streaming and extension with ACK coalescing", later at Amazon Data Services.
- Ashwath Reddy, M.S., Aug. 2010, Detecting networks employing algorithmically generated names, later at Microsoft.
- Prajjwal Devakota, M.S. Aug. 2010, Performance of Quantized Congestion Notification in TCP Incast in Data Centers, later at Bloomberg.
- Chaitanya Tadi, M.S., May 2009, IP Prefix Hijack Prevention Service, later at Intel.
- Marcus Dunn, M.S., May 2009, A new I/O scheduler for Solid State Devices, later at Cisco.
- Kiran Kotla, M.S., "Adapting the delay-based protocol PERT to heterogeneous environments", Aug. 2008, later at Cisco.
- Camelia Al-Najjar, M.S., August 2005, thesis on "An approach for improving performance of aggregate voice over IP traffic", pursuing Ph.D. at Case Western University.
- Saurabh Jain, M.S., May 2005, thesis on "LTCP-RC: RTT compensation technique to scale highspeed protocols to high RTT links", later at Cisco.
- Sridhar Vellanki, M.S., Feb. 2003, thesis on "Improving service availability through alternate routing", later at Microsoft.
- Sadry, Nauzad, M.S., Dec. 2002, thesis on "Evaluation of Delayed Congestion Response protocols for tolerating channel errors in wireless networks", later at Netezza.
- Achanta, Phani, M.S., Dec. 2002, thesis on "Design and Evaluation of Partial State Routers", later at IBM.
- Smitha, M.S. student, May 2001, thesis on "An active queue management scheme to contain high bandwidth flows at a congested router", later at Intel India.
- Sumitha Bhandarkar, M.S., August 2001, thesis on "Delayed Congestion Response Protocols", Ph.D. at TAMU.
- Aman Garg, M.S., August 2001, thesis on "Mitigating Denial of Service using QOS regulation", later at Tipping Point Technologies, Austin.
- Sai Gopalakrishnan, M.S., May 2000, later at Cisco, thesis on "TRIO: Active resource management in differentiated services networks".
- Qian Ren, M.S., May 2000, later at Lucent, thesis on "MPEG-aware disk storage system".
- Marcus Grande, M.S., Dec. 1999, later at IBM, thesis on "Multiported Storage Devices".
- Adnan Khaleel, M.S., Aug. 1999, later at Motorola, thesis on "Request and data distribution on a clustered server".

- Deying Tong, M.S., May 1999, later at Cisco, thesis on "Partial state based approaches to QOS enhancement".
- Sumit Gupta, M.S., Aug. 1998, later at Sun Labs, thesis on "IPRP: A client-oriented IP redirection mechanism and its applications".
- Ashwin Madhwaraj, M.S., May 1998, later at Cisco, thesis on "Adaptive video transport over networks".
- Gang Ma, M.S., May 1998, later at EMC Corp., thesis on "Evaluation of storage systems based on network attached storage".
- Mike Nichols, M.S., May 1998, later at UT Law School, thesis on "Personal informal retrieval agent".
- Ikjun Yeom, M.S., May 1998, later a faculty member at KAIST, Korea, thesis on "ENDE: An End-to-end Network Delay Emulator".

Service:

- Member, University IT Research Committee, 2018
- Chair, Turbo Lab Director Search Committee, 2017
- Chair, College Cybersecurity Search Committee, 2016-Present
- Member, University Chief Communications Officer Hiring Committee, 2015-16
- Member, University level Assoc. Former Students Awards Committee, 2016
- Member, TAMUQ FASC Committee, 2013
- Chair, Department Growth Committee, 2013
- Chair, College Taskforce on National Security, 2013
- Member, College Research Strategy Subcommittee, 2012
- Member, Computer Science and Engineering Head Search Committee, 2010-11, 2013-14
- Member College Awards Committee 2006-2008. 2010-2012
- Actively participating in improving undergraduate research experience. Co-PI of NSF REU grant. Advised 7 undergraduate students in the last few years
- Member, Computer Engineering Curriculum Committee, 2003-2012. Led the restructuring of Undergraduate curriculum in Computer Engineering
- Member, Department Tenure & Promotion Committee, 2004-2006, 2010-2012
- Member, Electrical and Computer Engineering Department Head Search Committee, 2004
- Member, Department Advisory committee 2003-2004
- Chair and Member, department Awards committee 2004-2006

- Member, Department Awards committee, 1997-2003, 2008-2009
- Member, Department Distinguished Speakers committee, 1996-1999, 2006-2008
- Chair and Member, Department Distinguished Speakers committee, 2010-present
- Member, Department undergraduate studies committee, 1997-2000
- Member, Department web site design committee, 2000-2004
- Group leader, Computer Engineering, 2005-2014

Administrative Experience:

Group Leader, Computer Engineering, 2005-2014:

- Led evaluation, development and rearchitecting the Computer Engineering program, a joint program across two departments of Electrical and Computer Engineering and Computer Science Engineering.
- Led the hiring of about 10 Computer Engineering faculty.
- Led the development of ENGR 111 Freshman Introduction of Electrical and Computer Engineering, primarily to improve retention in Electrical and Computer Engineering programs. Increased retention rates from 45% to about 80%.
- Led the development of several other courses ECEN 449 Microprocessor Systems Design, ECEN 627 Multimedia Systems and Networks, ECEN689 Computer Networks Security.
- Rebuilt several existing courses including ECEN 350 Computer Architecture and ECEN 676 Advanced Computer Architecture, ECEN 602 Computer Networks.
- Contributed to the national ranking of both undergraduate and graduate Computer Engineering programs to top 20 programs in the country.

TEES Assistant Agency Director for National and Global Initiatives, 2014- 2016:

- Developed and Established a TEES office in Yukatan, Mexico.
- Nurtured relationships in Brazil, France and India. The France relationship resulted in a collaborative center with ENSAM.
- Established realtionships with Kuwait Oil Company which resulted in an on-going discussion on a $15 million research contract.
- Developed a strategy to engage with National Labs and Federal Agencies.

Associate Dean for Research, College of Engineering and TEES Associate Agency Director for Centers and Strategic Initiatives, 2016-2021:

- Established strategic focus on several emerging areas of research including Autonomy, Synthetic Biology, Soft Matter, Cyber Security and Quantum Computing.
- Developed a strategy for supporting large multi-PI proposals and increased large proposal funding from 5-6 per year to about 25 per year.

- Increased TEES Research funding from about $110 million/year to $210 million/year from 2016-20.
- Increased Federal funding percentage from 38% to 68% of total TEES funding.
- Nurtured relationships with Army Research Lab (ARL) and facilitated the establishment of ARL-south relationship with A & M. Direct impact: ARL Cooperative Agreements in Synthetic Biology, Electric Power, Materials and Manufacturing, Autonomy and Cybersecurity with about 15 ARL people stationed at Texas A& M.
- Supported establishment of $65 million ARL/Army Futures Command (AFC) Cooperative agreement on Hypersonics, Autonomous vehicles and Networks.
- Contributed to $26 million Distributed Autonomy related project funded by Army Research Lab.
- Nurtured and furthered collaborations with Air Force Research Lab, resulting in the establishment of AFRL fellowships at A & M. Direct Impact: AFRL $4 million Minority Leaders Scholarships in Material Discovery and several projects with sensors, human performance and information directorates.
- Established relationships with Army Engineering and Research Development Center (ERDC). Resulted in $3 million contract. Exploring further options for joint projects.
- Establishing close collaborative ties with DOE/DOD National Labs. Resulted in Master Research Agreements and joint projects with several labs including Idaho National Lab(INL), Lawrence Livermore National Lab(LLNL), Pacific Northwest National Lab (PNNL) and others.
- Contributed to successful $40 million proposal for "Offshore Energy Safety Center 2.0" proposal to Department of Interior and Department of Energy.
- Started and organized "TEES Tech. Talk" series to facilitate hosting Labs and Agency researchers and program managers.
- Organized National Labs Day to facilitate interactions of graduate students with National Labs.
- Championed "Remote Ph.D. program for national labs".
- Established "Research Impact Awards" to facilitate a discussion and recognition of impactful research within the College.
- Established External Awards Support office to promote faculty for external professional awards.
- Supported young faculty applications to NSF, DOD/DOE/DARPA CAREER and Young Investigator awards. Increased NSF CAREER awards from 2/year to 8/year.
- Established NSA Masters Program.
- Expanded a weekly "Research Opportunities" bulletin to cover broader research opportunities.

- Interacted with the Research Deans of other colleges and supported inter-college collaborations.
- Established procedures and metrics for evaluating centers within college and reorganized centers after a thorough review of the existing centers. Managed about 30 Centers and Institutes.
- Established support to help graduate student applications for NSF and NDSEG Fellowships.

[1]Reddy's Students.

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